

In the Claims

Please amend claims 1, 3, 11, 18, 19, 21, 22 and 23 as follows. Claims 2, 14, 16 and 17 are canceled.

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a1  
1. (currently amended) A wavelength division multiplexed optical network having nodes coupled by links, to enable wavelengths to be routed across the network, the nodes being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes in a fully distributed search process, and re-routing each wavelength along a chosen one of the possible restoration routes; said nodes being arranged to make the choice of restoration route on the basis of optical parameters of the possible restoration routes, said optical parameters having been collected by said messages sent between the nodes.

2. Canceled.

3. (currently amended) The network of claim [2]1, the nodes being arranged to make the choice of restoration route additionally on the basis of optical parameters of the remainder of the path for the given wavelength.

4. (original) The network of claim 1, the nodes being arranged to make the choice of restoration route on the basis of optical parameters of the remainder of the path for the given wavelength.

5. (original) The network of claim 1, the nodes being arranged to switch traffic from one wavelength to a different wavelength, and the restoration process having the step of choosing a wavelength within that route.

6. (original) The network of claim 1, the nodes being arranged such that a node local to a fault makes the choice of which of the possible restoration paths to choose.

7. (original) The network of claim 1, the nodes being arranged to reserve bandwidth on the restoration routes only after the choice from the possible restoration paths, has been made.

8. (original) The network of claim 1, the nodes being arranged to make a separate search for possible restoration paths, for each wavelength or bands of wavelengths, to be restored.

9. (original) The network of claim 1, the nodes being arranged to send messages along the chosen restoration path to reserve the bandwidth, and if there is insufficient bandwidth, choose another of the possible restoration routes.

a 1  
10. (original) The network of claim 1, the nodes being arranged to choose a restoration path which rejoins the original path at a node not adjacent to the fault.

11. (currently amended) A node for use in a wavelength division multiplexed optical network having many such nodes coupled by links, to enable wavelengths to be routed across the network, the node being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes in a fully distributed search process, and re-routing each wavelength along a chosen one of the possible restoration routes; said node being arranged to make the choice of restoration route on the basis of optical parameters of the possible restoration routes; said optical parameters having been collected by said messages sent between the nodes.

12. (original) The node of claim 11, arranged to carry out the steps of sending out search messages, or choosing between possible restoration routes.

13. (original) The node of claim 12, arranged to carry out the steps of a Selector candidate, of identifying a possible restoration path which bypasses the nodes adjacent to a fault, and alerting the node arranged to carry out the choosing step.

14. Canceled.

15. (currently amended) The node of claim [[14]]11, the optical parameters comprising one or more selected from chromatic dispersion, polarisation mode dispersion, optical signal to noise ratio, optical power loss.

16. Canceled.

17. Canceled.

a 1  
18. (currently amended) The node of claim 11[[14]], being arranged to make the choice of restoration route additionally on the basis of optical parameters of the remainder of the path for the given wavelength.

19. (currently amended) A node for use in a wavelength division multiplexed optical network having many such nodes coupled by links, to enable wavelengths to be routed across the network, the node being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes in a fully distributed search process, collecting optical parameters of each possible restoration route using said messages, and re-routing each wavelength along one of the possible restoration routes, chosen on the basis of at least the collected optical parameters, and the node being arranged to cooperate with other nodes, and carry out the step of sending out the messages, or the step of making the choice between possible restoration routes.

20. (original) The node of claim 19, being arranged to make the choice of restoration route additionally on the basis of optical parameters of the remainder of the path for the given wavelength.

21. (currently amended) Software for use in [[a]] one or more nodes of a wavelength division multiplexed optical network having many such nodes coupled by links, to enable wavelengths to be routed across the network, the software being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes

in a fully distributed search process, and re-routing each wavelength along a chosen one of the possible restoration routes; said software being arranged to control one of the nodes to make the choice of restoration route on the basis of optical parameters of the possible restoration routes, said software being arranged such that said optical parameters are collected by said messages sent between the nodes.

22. (currently amended) A sequence of data signals on a link of a wavelength division multiplexed optical network having many nodes coupled by such links, to enable wavelengths to be routed across the network, the nodes being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes in a fully distributed search process, and re-routing each wavelength along a chosen one of the possible restoration routes, the data signals comprising at least some of the messages comprising optical parameters of the possible restoration routes, and signals for controlling the re-routing.

23. (currently amended) A method of transmitting data over a wavelength division multiplexed optical network having many nodes coupled by links, to enable wavelengths to be routed across the network, the nodes being arranged to carry out a restoration process to re-route one or more of the wavelengths, the restoration process having the steps of: after a failure sending messages between the nodes to dynamically determine possible restoration routes in a fully distributed search process, and re-routing each wavelength along a chosen one of the possible restoration routes, said nodes being arranged to make the choice of restoration route on the basis of optical parameters of the possible restoration routes, said optical parameters having been collected by said messages sent between the nodes, the method having the steps of using the nodes to transmit the data over an original path or, following the restoration process, over a re-routed path.